

DOCKET NO.: DMCI-0026
Application No.: 09/462,576
Office Action Dated: August 11, 2003

COPY

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

REMARKS/ARGUMENTS**Status of the Prosecution:**

Claims 1-7, 31-34 and 41-43 are pending in the application. Claims 41-43, newly presented with the prior response have been subjected to a restriction requirement and withdrawn. Claims 1, 4, 5, 6, 7, and 31-32 are amended herein. Claim 44 is newly presented herein. Applicants assert that no new matter has been introduced with the amendments.

New claims 41-43 are linked to the elected invention and present no additional search burden on the Examiner.

Claims 41-43 were restricted from the application and withdrawn allegedly on the grounds that they are directed to a nonelected invention. Applicants respectfully assert that the new claims are directly linked to the elected invention because claims 31-34 which are already under examination include cultured *Vanilla planifolia* cells in a culture medium which essentially meets the limitations of the medium of claims 41-43. Thus, even though the inventions may be distinct, there is no additional search burden on the Examiner, let alone a serious search burden, as such, because a search directed to the cells cultured in such a medium has already necessarily been conducted in the examination of claims 31-34. Accordingly, Applicants request that the claims be rejoined.

The claims as amended are fully enabled.

Claims 1-7, and 31-34 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly not enabled for the combinations claimed. Applicants respectfully maintain that the grounds of the rejection are legally and scientifically improper, as the skilled artisan can readily make the combinations from what is known in the art. Additionally, Applicants maintain that the Yin reference is more germane to the prosecution of the instant claims than

DOCKET NO.: DMCI-0026
Application No.: 09/462,576
Office Action Dated: August 11, 2003

COPY

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

the Rao reference, and respectfully submit that at the very least the Office Action applies a double standard as to relevance. Thus, while Applicants and the examiner continue to differ on this issue, in a sincere effort to advance prosecution, the claimed combinations have been eliminated by amendment and thus, the rejection is rendered moot. Accordingly, Applicants request reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first paragraph.

Claim 1 is definite with respect to the metes and bounds of what is claimed.

Claim 1 stands rejected as allegedly indefinite under 35 U.S.C. § 112, second paragraph for the recitation "at a concentration of at least about 0.01% by weight. . ." In addition to eliminating the combinations as discussed above, the claim has been amended to the concentration which the examiner has acknowledged is fully enabled, i.e. 3%, accordingly the claim now reads "about 3%" which is definite in view of the specification. Accordingly, the Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

Claims 31-34 are patentably distinct from the teachings of Knuth *et al.*

Claims 31-34 stand rejected as allegedly anticipated by Knuth *et al.* (U.S. Patent No. 5,057,424) ("Knuth"). The claims are directed to cell cultures comprising *Vanilla planifolia* cells in a culture medium supplemented with an elicitor of vanillin synthesis selected from the group consisting of malic acid, 3,4-dihydroxybenzaldehyde, and glycosylated lysozyme, wherein, after about 15 days exposure to the elicitor, the cell culture produces at least twice as much vanillin as a cell culture after 15 days in culture under equivalent conditions, in a culture medium which was not supplemented with the elicitor. The claims are further directed to cell cultures which produce 10 times as much vanillin after 15 days, and further wherein the cells are embryo cells, root tips cells, and wherein the culture produces ten times the amount of vanillin seven days.

DOCKET NO.: DMCI-0026
Application No.: 09/462,576
Office Action Dated: August 11, 2003

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

COPY
Knuth teaches cells which are pregrown and maintained with exposure to a vitamin mixture, including malic acid at 10 mg/l. After 29 days of culture, Knuth measured vanillin and again at 38 and 47 days. In the 18 days between day 29 and day 47, Knuth's culture increased in vanillin ten-fold. Knuth does not compare his culture to a culture grown in the absence of malic acid. Knuth does not provide any data for his cultures at day 15 after exposure to the elicitor. Additionally, Knuth provides the malic acid at a concentration of 10 mg/l (or .001%).

The claimed cultures are not pre-exposed to any malic acid or other elicitor. The concentration of elicitor used (.01 to 3% by weight) in the instant invention is at least 10 to 3000 times greater than that taught by Knuth. The increase in vanillin is at least two to ten-fold in 15 days (or 7 days), not 18 days. Applicants respectfully assert that it cannot be said that the cultures, as taught by Knuth would *necessarily* produce vanillin at two or ten times the amount of a control culture not exposed to elicitor, or that such culture had any increase over a culture not incubated with elicitor. Knuth is simply not enabling for such a culture as it does not teach the elicitor at any where near the range used by Applicants' invention, it does not teach the exposure time of only 15 days (or 7 days), and it does not teach an increase relative to a culture not exposed to the elicitor.

Accordingly, Applicants maintain the Knuth does not teach each and every element of the claimed invention, and is not enabling disclosure for such invention. Given the lack of enabling disclosure relative to the Applicants' invention, Knuth cannot be said to expressly or inherently anticipate the invention, as that is not *necessarily* true of Knuth's teachings. Given that Knuth reports only 10 times the amount of vanillin produced after 18 days additional incubation (and 47 days total exposure), it is not possible to state that the cultures necessarily would have produced that much after only 15 (or seven) days exposure.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 35 U.S.C. §102.

Conclusion:

In accordance with the above and the amendments made herein, Applicants respectfully assert that all claims are in condition for allowance. An early and favorable

DOCKET NO.: DMCI-0026
Application No.: 09/462,576
Office Action Dated: August 11, 2003

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

COPY
action to that end is respectfully requested. The examiner is sincerely invited to contact the Applicants' undersigned representative to resolve any questions or issues relating to the allowance of the claims, by telephone at 215-557-5986, or by email at sscioli@woodcock.com.

Respectfully submitted,

Scott E. Scioli

Scott E. Scioli
Registration No. 47,930

Date: December 11, 2003

Woodcock Washburn LLP
One Liberty Place - 46th Floor
Philadelphia PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439

COPY

**RECEIVED BY THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Paper: Reply Transmittal (in duplicate) with express mail sticker; Reply Pursuant to 37 CFR § 1.116; Check in the amount of \$110.00 and return receipt postcard all filed via express mail label number EL970385421US.

Applicant(s): Daphna Haimin-Frenkel, et al.
Title: Improved Vanillin Production
Application No.: 09/462,576
Filed: May 25, 2000
Docket No.: DMCI-0026
Date Sent: December 11, 2003
Sent By: CALDWELL/REED/SCIOLI/cmnes

